Participate in the Future of Java

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San Diego JUG
What Runs Java?
Ubiquitous

- 9 Million Java developers
- 3 Billion devices
- #1 Choice for developers
- #1 Development platform
Scalable & Secure

Footprint

100MB+
10MB-100MB
1MB-10MB
50KB-1MB

Java Card  Java ME Embedded  Java SE Embedded  Java SE  Java EE
SECURITY  SMALL EMBEDDED  MEDIUM EMBEDDED  LARGE EMBEDDED  DESKTOP  SERVER
Compatible
Heather VanCura
Java Community Process (JCP) Program

- Director of the JCP Program Office
- Leader of Global Adopt-a-JSR Programs
- Open Source Fan
- Native Californian - from San Diego
- Personal Interests: Fun 😊

Bay Area, California - USA
Statistics

- 12,000+ Users
- 2,500 Expert Group Members
- 800+ Member Organizations
- 60+ Java User Groups
- 25 EC Members
- 375+ JSRs
Who Are The Members?

- Corporations
- Non-Profits/Open Source
- Java User Groups
- Individual Developers

https://jcp.org/en/participation/membership
The Executive Committee

- Corporations
- Non-Profits/Open Source
- Java User Groups
- Individual Developers
Organization
Work of the JCP – How We Do It

• Java Specification Requests (JSRs)
  • A JSR is a single version of a Java specification.
• JSRs are led by a community member (the Spec Lead), with a group of interested members (the Expert Group) helping with the day-to-day decisions and work.
  • Any JCP member can submit and lead a JSR.
• Each Expert Group must deliver:
  • The Specification
  • A Reference Implementation (RI)
  • A Technology Compatibility Kit (TCK)
Compatibility Triangle

Is the specification unambiguous?
Can you build an implementation?
Is the TCK correct?
Does the RI conform?
The JSR Development Cycle

- Includes formal public reviews and votes by the Executive Committee.
- Full Members can submit & lead JSRs, serve on JSR Expert Groups.
- See the Process Document for the details.
How else can you get involved?

- Share ideas and feedback, comment on list and public issue trackers.
- Read early versions of specifications and Javadocs.
- Try writing sample applications using early builds of reference implementation.
- Write or speak about the technology and encourage others to participate. Translate into your native language.
- Evangelize the JSR - social media, blogging or lightning talks.
- Help with documentation.
How: Open Standards & Open Source
Complimentary

• Open source important requirement. So are Standards.
  • Coop-ition. Agree on what to standardize (cooperation) & what to complete on (implementations).

• Open standards implemented in open source = easier to implement standard & for developers to understand technology.
  • Results in more implementations and greater adoption of the standard.

• An effective way to develop a standard-start with an open source project that has demonstrated the need for standardization.
Open Source Implementations

The Reference Implementations of the Java SE and Java EE platforms are also developed collaboratively and released under open-source licenses.

– Java SE: OpenJDK
– Java EE: Project GlassFish
Why Participate?

1. Knowledge
2. Skills
3. Visibility
4. Altruism
5. Fun
Why Participate as Corporation?

Joining the JCP empowers you to:

• Take Initiative – Requirements
• Adapt and Inform
• Develop New Markets
• Grow Developers
2011 - Present Day

- New revisions of each of the three platforms.
- “JCP.Next” reforms.
- Increased participation from Java User Groups.
Java EE 7: (JSR 342) – May 2013
Java ME 8: (JSRs 360 & 361) – April 2014

- Additional APIs (Examples)
  - Messaging
  - Wireless Communication
  - Protocols and Data Conversion
  - Security and Management
  - Additional Optional APIs
  - Location
  - Web Services
  - Sensors
  - Additional Optional JSRs
  - Vertical Specific APIs

- On-Device I/O Access
  - Device I/O API

- Generic Connection Framework
  - GCF 8

- Application Platform
  - Java ME Embedded Profile (MEEP) 8 (JSR 361)

- Security and Trust Services
  - SATSA (JSR 177)

- Java VM
  - Java ME Connected Limited Device Configuration (CLDC) 8 (JSR 360)
Java SE 8: JSR 337 - March 2014

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<th>Security</th>
<th>Int'l</th>
<th>RMI</th>
<th>IDL</th>
<th>Deploy</th>
<th>Monitoring</th>
<th>Troubleshoot</th>
<th>JConsole</th>
<th>Java VisualVM</th>
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<td>java</td>
<td>javac</td>
<td>javadoc</td>
<td>apt</td>
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<td>javap</td>
<td>JPDA</td>
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<td>Java Web Start</td>
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Java 8 Adoption
JCP.next: Changing the Constitution

We the People of the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this CONSTITUTION for the United States of America.

Article I.

Section 1. All legislative Powers herein granted shall be vested in a Congress of the United States, which shall consist of a Senate and House of Representatives.

Section 2. The House of Representatives shall be composed of Members chosen every second Year by the People of the several States, and the Electors in each State shall have the Qualifications requisite for Electors of the most numerous Branch of the State Legislature.

No Person shall be a Representative who shall not have attained to the Age of twenty-five Years, and been seven Years a Citizen of the United States, and who shall not, when elected, be an Inhabitant of that State in which he shall be chosen.

Representatives and direct Taxes shall be apportioned among the several States which may be included within this Union, according to their respective Numbers, which shall be determined by adding to the whole Number of free Persons, including those bound to Service for a Term of Years, and excluding Indians not taxed, three fifths of all other Persons. The actual Enumeration shall be made within three Years after the first Meeting of the Congress of the United States, and within every subsequent Term of ten Years, in such Manner as they shall by Law direct. The Number of Representatives shall not exceed one for every thirty Thousand, but each State shall have at Least one Representative; and no State shall send less than one Representative. The House of Representatives shall choose their Speaker and other Officers; and shall have the sole Power of Impeachment.

The Senate of the United States shall be composed of two Senators from each State, chosen by the Legislature thereof, for six Years; and each Senator shall have one Vote.

Immediately after they shall be assembled in Consequence of the first Election, they shall be divided as equally as may be into three Classes. The Seats of the Senators of the first Class shall be vacated at the Expiration of the second Year, of the second Class at the Expiration of the fourth Year, and of the third Class at the Expiration of the sixth Year, so that one-third may be chosen every second Year; and if Vacancies happen by Resignation, or otherwise, during the Recess of the Legislature of any State, the Executive thereof may make temporary Appointments until the next Meeting of the Legislature, which shall then fill such Vacancies.

No Person shall be a Senator who shall not have attained to the Age of thirty Years, and been nine Years a Citizen of the United States, and who shall not, when elected, be an Inhabitant of that State for which he shall be chosen.

The Vice President of the United States shall be President of the Senate, but shall have no Vote, unless they be equally divided.

The Senate shall choose their other Officers, and also a President pro tempore, in the absence of the Vice President, or when he shall exercise the Office of President of the United States.

The Senate shall have the sole Power to try all Impeachments. When sitting for that Purpose, they shall be on Oath or Affirmation. When the President of the United States is tried, the Chief Justice shall preside: And no Person shall be convicted without the Concurrance of two thirds of the Members present.

Judgment in Cases of Impeachment shall not extend further than to removal from Office, and disqualification to hold and enjoy any Office of honor, Trust or Profit under the United States: but the Party convicted shall nevertheless be liable and subject to Indictment, Trial, Judgment and Punishment, according to Law.
JCP.next (JSR 348)
JCP.next (JSR 355)
JCP.next (JSR 364)
JCP 2.10, Broadening JCP Membership

- Eliminate Barriers to participation.
- Introduce new Membership levels.
- No Membership Fees.
- Electronic Signatures.
- Add Contributors for JSR Expert Groups.
- Add Associate Seats on Executive Committee.
Goal: encourage more individuals and organizations to join and participate in the JCP while ensuring that we have appropriate IP commitments from all members.

New *Associate* membership class for individuals with a much simpler membership agreement.
  - No lawyers and no employer approval required.
  - Associates can be formally recognized as Contributors to a JSR.

New *Partner* membership class for Java User Groups that are not legal entities.

Electronic submission and signing of membership agreements.

Free membership for corporations.

The JSR was completed in April 2016 and is now in effect.

We have already recruited many new members.
Memberships

- **Associate Members** are individuals who can contribute to JSRs and vote for the Executive Committee.

- **Partner Members** are Java User Groups and other non-profit organizations that can serve on and vote for the Executive Committee.

- **Full Members** can serve on Expert Groups, lead JSRs, serve on and vote for the Executive Committee.
JCP 2.10 – I individuals

- If you are an individual developer and/or a member of a Java User group you can now join as an Associate member.
  - No lawyers and no employer approval required.
  - You can be formally recognized as a Contributor to a JSR.
  - Associate members can vote for two dedicated Associate seats on the Executive Committee.
- You can still join as a full member, but:
  - If you are employed, your employer must sign an Employer Contribution Agreement.
    - A better approach is for your employer to join the JCP as an organization – then all employees can participate as representatives of the employer.
  - Otherwise you must sign the JSPA in your own right.
    - Remember - this is a complicated legal document.
Before JSR 364, JUGs used to sign the JSPA.
For those (most of them) that are not legal entities this made no sense (a non-organization cannot legally make IP commitments).
Instead, JUGs can now join as Partner members.
The Partner Membership Agreement is much simpler than the JSPA, but does not make any IP commitments.
Partner Members can become Supporters of JSRs and participate in Adoption program activities.
JUG members who wish to contribute must therefore join in their own right as Associate or Full members.
JCP 2.10 – Organizations

• Corporations and legal-entity organizations can join as Full members.
• Membership is now free – all fees are permanently waived.
• All employees of member organizations can participate in the JCP’s activities and JSR Expert Groups as representatives of their employer.
JCP 2.10 – online membership processing

- JCP membership agreements can now be submitted online and are signed through an electronic signature process.
  - No need to print, physically sign, scan, and email the agreements.
  - Membership agreements are processed almost instantly 😊.
## Participation

### Participation in the JCP by Key Events

<table>
<thead>
<tr>
<th>Event</th>
<th>Observer</th>
<th>Registered User</th>
<th>Associate Member</th>
<th>Partner Member</th>
<th>Full Member</th>
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<tr>
<td>Review JSRs</td>
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<td>Review specification drafts</td>
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<tr>
<td>View Expert Group materials (JCP 2.8 and above JSRs)</td>
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<td>View Expert Group and Contributor nominations</td>
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<td>Be listed as a Supporter for a JSR Proposal</td>
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<td>Create a JSR Watch List</td>
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<td>Nominate Contributors</td>
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<td>Nominate for Expert Group</td>
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<tr>
<td>Propose new JSRs</td>
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<td>Attend JCP Member events</td>
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<tr>
<td>Serve as a Contributor to a JSR</td>
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<tr>
<td>Vote for an Associated Seat in the Executive Committee elections</td>
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<tr>
<td>Vote for a Ratified Seat in the Executive Committee elections</td>
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<tr>
<td>Vote for an Elected Seat in the Executive Committee elections</td>
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<tr>
<td>Serve on the Executive Committee</td>
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<tr>
<td>Review Community Drafts (JCP 2.1)</td>
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<tr>
<td>Serve on Expert Groups</td>
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<tr>
<td>Lead JSRs</td>
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</table>
What is the right membership for you?

**Commercial Organization**
- Are you willing and able to sign the JSFA and license IP? 
  - YES → Sign JSFA → Full Membership granted 
  - NO → No Membership available

**Non-Profit**
- Are you a Legal Entity? 
  - YES → Sign JSFA → Full Membership granted 
  - NO → Sign Partner Membership Agreement → Partner Membership granted

**Individual**
- Are you willing and able to sign the JSFA and license IP? 
  - YES → Sign Associate Membership Agreement → Associate Membership granted to individual 
  - NO → Sign JSFA → Full Membership granted to individual 
- Are you employed? 
  - YES → Employer signs JSFA and employee signs JSFA → Full Membership granted to individual 
  - NO → Is your employer willing to join the JCP? 
    - YES → Employer signs JCP and joins as Full Member → Request to represent your employer → Individual becomes a representative of Full Member 
    - NO → Sign Associate Membership Agreement → Associate Membership granted to individual
<table>
<thead>
<tr>
<th>Privileges</th>
<th>Associate Member</th>
<th>Full Member</th>
<th>Partner Member</th>
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<tr>
<td>Serve on EC</td>
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<tr>
<td>Vote for Elected Seat</td>
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<tr>
<td>Vote for Ratified Seat</td>
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</tr>
<tr>
<td>Vote for Associate Seat</td>
<td>☑</td>
<td>☒</td>
<td>☑</td>
</tr>
<tr>
<td>Be a Member of an Expert Group</td>
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<td>☐(1)</td>
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<tr>
<td>Be a Contributor to an Expert Group</td>
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</tr>
<tr>
<td>Be a Specification Lead</td>
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</table>

*Partner members who serve on the EC can join the expert groups for process change JEPs (e.g. JCP next).*
Membership Drive

• Join by 14 October to participate in the 2016 JCP Elections:
  • Ballot open 1 – 14 November 2016.
  • Membership Overview:
    • [https://jcp.org/en/participation/overview](https://jcp.org/en/participation/overview)
  • Instructions for Joining:
The JCP is More Open Than Before
How will you Participate?

- As an Individual – OK.
- As part of a team – better.
- Work through your JUG or employer.
  - Help each other
  - Teach other.
  - Work with each other.
Working Together – JavaOne 2016 in September
https://www.youtube.com/watch?v=J5_MH5jCYh0
Adopt-a-JSR

- A JUG-lead initiative to improve Java standards.
- Global groups of JUG members work on JSRs.
  - Receive attention from local industry.
  - Become more professional – helps focus your group efforts.
  - Attract more developers to your community
JUGs around the World
Use Cases

Chennai JUG

JSR 338, Java Persistence 2.1
JSR 344, JSF 2.2
JSR 352, Batch
JSR 353, JSON
JSR 356, WebSocket

Developed sample ‘Urban Traveler’ application.
Use Cases

London Java Community
JSR 310, Date and Time API
JSR 335, Lambda Expressions
Myriad hack days, talks and events organized!
Use Cases

BeJUG (Belgium)

JSR 356, Java API for WebSocket

Hack day(s).

Developed Tic-Tac-Toe game Included in Java EE 7 SDK.
Use Cases

SouJava (Brazil)
JSR 310, Date and Time API
JSR 339, JAX-RS 2.0
344, JSF 2.2
Many talks, books, articles, classes, code dojos (hack days), translations
Java EE 8 Community Survey

Web standards/HTML5 alignment, Cloud, CDI alignment, Enterprise, Java SE 8

Glasfish.org/surveys
ADOPTAJSR.ORG wiki – Get Started & join list

Introduction

This program is intended to encourage JUG members, individuals and other organisations to get involved in Java Specification Requests (JSRs). This means more grass roots, developer level participation in existing and emerging Java standards. JSRs cover all aspects of the Java ecosystem such as the new Date and Time API coming into Java 8, the coming Java EE 8 APIs for the cloud and much more!

Also see Benefits and Laser-like focus

Who’s Adopting JSRs?

See the Active JSRs, Status of active JSRs and Who is Adopting JSRs.

Getting Started
1) Pick JSR - New JSRs
https://jcp.org/en/jsr/stage?listBy=active

Recently submitted:

Java EE 8 (JSR 366)
CDI 2 (JSR 365)
JSON-B (JSR 367)
JMS 2.1 (JSR 368)
Servlet 4 (JSR 369)
JAX-RS 2.1 (JSR 370)
MVC (JSR 371)
JSF 2.3 (JSR 372)

Security (JSR 375)
Java EE Management (JSR 373)
JSON-P 1.1 (JSR 374)
Units of Measurement (JSR 363)
Java Module System (JSR 376)
Desktop Application API (JSR 377)
Portlet 3.0 Bridge for JSF 2.2 (JSR 378)
Java SE 9 Release Contents (JSR 379)
List of Active JSRs (posting in last 12 months):
http://jcp.org/en/jsr/all?status=Active&activeMonths=12
2) Communication: Two Way Street
3) Decide on Steps: Java EE Adopt-a-JSR

Adopt-a-JSR for Java EE 7 and beyond

Adopt-a-JSR is an initiative by JUG leaders to encourage JUG members to get involved in a JSR and to evangelize that JSR to their JUG and the wider Java community, in order to increase grass roots participation. The typical question in Adopt-a-JSR is “How do I get started?”

In general, the Starter Level tasks are helpful at all stages of a JSR. The platform is already released and several JUGs already contributed to improve the quality.

The Java EE 7 platform was released on June 12, 2013, and can be downloaded from here. You can continue to provide feedback on different JSRs and influence the future direction:

- API for WebSocket 1.0 (JSR 350)
- Java API for JSON Processing 1.0 (JSR 352)
- Batch Applications for the Java Platform 1.0 (JSR 352)
- Concurrency Utilities for Java EE 1.0 (JSR 233)
- Java API for RESTful Web Services 3.0 (JSR 338)
- Java Message Service 2.0 (JSR 343)
- Expression Language 3.0 (JSR 341)
- Javassist Facets 2.2 (JSR 344)
- Servlet 3.1 (JSR 340)
- Java Persistence API 2.1 (JSR 330)
- Enterprise JavaBeans 3.2 (JSR 343)
- Core and Dependency Injection 1.1 (JSR 346)
- Interceptors 1.2 (JSR 318)
- Bean Validation 1.1 (JSR 348)
- Java Transaction API 1.2 (JSR 907)

General Areas for Providing Feedback

Each specification can take general feedback in the following areas:
- Build sample applications using the implementations integrated in GlassFish 4.
- Ensure all issues in JIRA are:
  - reproducible with the latest codebase.
  - have a short, self-contained, compilable, executable reproducer
  - have the correct metadata (component, environment, version, etc).
- Read the final version of the specification (available from the JSR page) and provide feedback. You don’t need to necessarily review the entire specification and instead can focus on specific chapters and sections.
- Review the javadoc for clarity and completeness.
- Explore integration of onemilestone technologies with your existing Java EE applications.
- File bugs on the corresponding spec or IR project.
4) Enter activity in the matrix - Collaborate
5) Follow Public Discussions & Comment - Jira example
5) How to Write a Bug - SSCCE

- Short, Self Contained, Correct (Compilable), Example
- Short (Small) - Minimise bandwidth for the example, do not bore the audience.
- Self Contained - Ensure everything is included, ready to go.
- Correct - Copy, paste, (compile,) see is the aim.
- Example - Displays the problem we are trying to solve.
6) Share - Add & Use Resources on GitHub
Participate in OpenJDK

- Adoption Group & Quality Outreach
  - Join mail list prior to sending feedback: http://mail.openjdk.java.net/mailman/listinfo/adooption-discuss
  - https://wiki.openjdk.java.net/display/quality/Quality+Outreach
JDK 9
Another big step forward

- 72 JEPs targeted for JDK 9
  - JEP == Java Enhancement Proposal
- Big one – JEP 261– Module System
  - http://openjdk.java.net/jeps/261
  - Related JEPs for the Module System
    - JEP 200 – The Modular JDK
    - JEP 201 – Modular Source Code
    - JEP 220 – Modular Run-Time Images
    - JEP 260 – Encapsulate Most Internal APIs
    - JEP 162 – Prepare for Modularization
JDK 9
Another big step forward

- Jigsaw available in current JDK 9 EA (early access)
  - [https://jdk9.java.net/download/](https://jdk9.java.net/download/)
    - Build 111 or later has Jigsaw in it
    - Current available downloadable build is Build 127
JDK 9 Outreach
https://wiki.openjdk.java.net/display/Adoption/JDK+9+Outreach#JDK9Outreach-Introduction

- JDK 9 Outreach
  - Introduction
  - Cautions
  - JDK 9 Features
    - The Little Things
    - JDK 9 Early Adopter Bugsl
    - Look for unregistered VM options
    - Run jdeps on your code
  - Testing Your Code
  - JDK 9 changes that may affect your code
    - Added
    - ODEP Style for TLB
    - Parser API for Nashorn
    - Validate JVM Command-Line Flag Arguments
  - Changed
    - Modular Run-Time images
    - New Version-Signing Schema
    - Unified JVM Logging
    - Use CLDR Locale Data by Default
  - Removed
    - Remove GC Combinations Deprecated in JDK 8
    - Remove Launch-Time JRE Version Selection
    - Remove the JVM Tool Agent
    - Remove the Jhat Tool
    - Removed API references to java.awt.peer and java.awt.dnd.peer packages
    - Removed PacketUnpacker addPropertyChangeListener and removePropertyChangeListener methods
    - Removed LogManager.setPropertiesChangedListener and removePropertiesChangeListener methods
    - Removed com.sun.security.auth breakout and DialogCallbackHandler
  - Build
    - MIRing Project Code
    - Simplified JAR API
    - Annotations Pipeline 3.6
    - HTML5 Javase
    - Removed support for 1.5 and earlier source and target options
  - Feedback on new JDK 9 features
    - Make G1 the default Garbage Collector
    - jaehl: The Java Shell (Read-Eval-Print Loop)
  - Other potential changes to consider
• Test Java 9 – changes that may affect your code

  • **JDK 9 changes that may affect your code** - Added
    - OCSP Stapling for TLS
    - Multi-Release JAR Files
    - Parser API for Nashorn
    - Prepare JavaFX UI Controls & CSS APIs for Modularization
    - Validate JVM Command-Line Flag Arguments
    - XML Catalogs
    - Platform-Specific Desktop Features
    - Jlback.DialogCallbackHandler
Test Java 9 – changes that may affect your code

- **Changed**
  - `Arrays.asList(x).toArray()` returns Object[]
  - Create PKCS12 Keystores by Default
  - HarfBuzz Font-Layout Engine
  - Make G1 the Default Garbage Collector
  - Marlin Graphics Renderer
  - Modular Run-Time Images
  - New Version-String Scheme
  - Unified JVM Logging
  - Use CLDR Locale Data by Default
  - UTF-8 Property Files
Test Java 9 – changes that may affect your code

- **Removed**
  - Remove GC Combinations Deprecated in JDK 8
  - Remove Launch-Time JRE Version Selection
  - Remove the JVM TI hprof Agent
  - Remove the jhat Tool
  - Removed API references to java.awt.peer and java.awt.dnd.peer packages
  - Removed Packer/Unpacker addPropertyChangeListener and removePropertyChangeListener methods
  - Removed LogManager addPropertyChangeListener and removePropertyChangeListener methods
  - Removed com.sun.security.auth.ca
7) Participate in Hack Days – Have Fun!
JavaOne 2016 Plans!!

- Friday: Java Community BBQ
- Saturday: JavaOne4Kids
- Sunday: User Group Sunday (JCP EC Public Meeting)
- Monday: JCP Party (& Java Community Band 😊)
- Wednesday: JCP Meet & Greet for Members, Spec Leads, Adoption
- Hackergarten in JavaHub
- Sessions tbd
We need you!

- Follow the JCP online: http://JCP.org
- Join the JCP: https://jcp.org/en/participation/membership
- Twitter @jcp_org #JCP
- blogs.oracle.com/jcp
- Facebook: Java Community Process
- Adopt-a-JSR online: adoptajsr.org. #adoptajsr
- members@adoptajsr.java.net - the global mailing list
- IRC: #adoptajsr channel on irc.freenode.net
- GitHub: https://github.com/Adopt-a-JSR
If you want to go far...

I NEED YOU to Adopt A JSR!